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Before the Covid-19 pandemic, the Aquatic Ecology Conservation Programme has helped local communities in generating new economic resources with a total net income of RM77,200 through recreational fishing activities

by ANIS HAZIM

IT IS no secret that the country's aquatic ecosystem has become more fragile with looming threats from climate change, habitat fragmentation, pollution and accidental release of invasive substances. In conserving the aquatic ecosystem, Tenaga Nasional Bhd (TNB) through its subsidiaries, TNB Research Sdn Bhd and TNB Power Generation Sdn Bhd (TNB Genco), have taken the initiative implementing Aquatic Ecological Conservation Programme at the Hulu Terengganu Hydroelectric Power Stations to increase local fish populations and expand eco-tourism products.

The conservation programme aims to reduce the impact of hydroelectric project development on aquatic ecosystems, such as water quality, fish, aquatic insects and small organisms such as plankton. Besides, TNB has also contributed to preserving the *Kelah* fish or the Malaysian kings of the rivers, Mahseer.

The *Kelah* fish is important in the aquatic ecosystem and act as a benchmark — if they can live and reproduce — it indicates that the river is a healthy habitat and has high biodiversity. The contributions have fulfilled TNB's commitment to environmental, social and governance issues, increasingly attracting the global community, including investors.

Thus far, TNB Genco has activated two sanctuaries in the hydroelectric development areas, namely Sungai Tembat in Hulu Terengganu, Terengganu, and Sungai Tiang in the Royal Belum Rainforest, Perak. However, the Sungai Tembat sanctuary had to be closed due to logistical difficulties as its located far in the upstream area, while Sungai Tiang which is actively being developed will be commercialised once the Movement Control Order period ends.

Kelah is Valuably Exclusive

Kelah fish is not only the "king" of Malaysian rivers but also crowned in drainage and river from the Himalayas to Asian countries such as Afghanistan, Pakistan, India, Bangladesh, Nepal, Myanmar, Sri Lanka, Thailand, Cambodia, Laos, China, Vietnam and Indonesia.

According to the International Union for Conservation of Nature's Red List, the *Kelah* fish are endangered species that are very sensitive to changes in river ecosystems and do not live in lakes as the water temperature is warm and has no current.

Kelah, or its scientific name *Tor tambra*, can be



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Aquatic Ecological Conservation Programme aims to reduce the impact of hydroelectric project development on aquatic ecosystems

found in Peninsular Malaysia as well as in Sabah and Sarawak which has been classified as an endangered animal that is protected under the Malaysia Wildlife Protection Act 1972 (Act 76).

Its natural habitat is at the upper reaches of the river with strong currents, clear and rocky, mostly in the fast-flowing rivers that have several levels of rapids and depths as well as rich in riverside vegetation. It also likes to migrate against the current from the main river to the headwaters of the spawning tributaries. Its main diet includes figs, aquatic and terrestrial insects, fry, shrimp and plankton.

The *Kelah* exclusively has a class of its own

with its fine meat texture and delicious filling and its price can reach RM500 per kg.

Maintaining the Growth

TNB, through TNB Genco, spends about RM6 million every year on various environmental conservation studies in hydroelectric schemes in both Hulu Terengganu and Sungai Perak, including its Aquatic Ecology Conservation Programme to maintain and encourage the growth of the species.

During the construction of the Hulu Terengganu station, a total of 772 *Kelah* fish were successfully transferred to the upstream river via TNB Genco's fish rescue activities including the largest *Kelah* fish weighing around 15kg.

TNB Research researcher and coordinator Dr Mohd Shafiq Zakeyuddin said that both TNB Research and TNB Genco, together with the local community have conducted a pilot study and produced the best method to ensure the fish population is not affected.

"The pilot study includes the monitoring of water quality and aquatic life, fish rescue, construction of fish sanctuaries, breeding activities and release of fish fry, evaluation of recreational fishing programmes, the study of fish movements as well as community activities under the Communication Programme, Education and Public Awareness," said Mohd Shafiq.

According to him, the main success of the programme is maintaining the parent population of *Kelah* fish and bring its growth to 27.4%. In terms of water ecology conservation, the programme in Hulu Terengganu is a benchmark for the sustainable development of TNB Genco's

hydroelectric projects, as well as a future reference, especially for hydroelectric projects such as in Nenggiri, Kelantan.

"Therefore, I hope that this programme can be implemented continuously with the support of all parties. It not only benefits the environment but also opens up new economic resource opportunities for the local community," added Mohd Shafiq.

TNB Research has collaborated with the Terengganu State Forest Department and the Hulu Terengganu EcoTourism Cooperative established by the community near the Hulu Terengganu Power Station.

Benefits to the Local Community

Before the Covid-19 pandemic, the Aquatic Ecology Conservation Programme has helped local communities in generating new economic resources with a total net income of RM77,200 through recreational fishing activities during the 16 months of operation until November 2019.

A part of the income is donated to the children of cooperative members to help them buy school supplies. Every day, local villagers who have been trained by TNB Research staff will feed the fish by giving pellets as the main food to ensure that the fish in the sanctuary can be tamed and comfortable in the presence of humans.

This conservation initiative has also been receiving positive feedback from the Fisheries Department, Forestry Department, Environment Department as well as TNB's staff. The aquatic ecosystem is crucial to economic opportunity and this programme may safeguard and preserve the ecosystem in the future.



Photo taken before pandemic Covid-19. One of the sanctuaries in the hydroelectric development areas at Sungai Tiang